CLAIM AMENDMENTS

Claims 1-15 (Canceled).

Claim 16. (New) A method for selectively separating live cells which have expressed a specific mRNA from a live cell group comprising:

a first step of determining a site of the specific mRNA that has high accessibility for oligonucleotide probe hybridization and preparing an oligonucleotide probe, labeled with a fluorescent dye, having a base sequence capable of hybridizing to the base sequence of the thus determined site, wherein the fluorescence of the fluorescent dye will change upon the formation of a hybrid between the labeled oligonucleotide probe and the specific mRNA;

a second step of introducing the labeled oligonucleotide probes into cells in a live cell group containing the live cells which have expressed the specific mRNA and the live cells which have not expressed the specific mRNA, whereby the labeled oligonucleotide probes hybridize to the specific mRNA expressed in the live cells;

a third step of irradiating light to the live cell group containing the live cells having hybridized and unhybridized oligonucleotide probes and the live cells having only unhybridized oligonucleotide probes and measuring the fluorescence which is emitted by the live cells, wherein the fluorescence from the cells having hybridized and unhybridized oligonucleotide probes is different from the fluorescence from the cells having only unhybridized oligonucleotide probes due to a change in fluorescence caused by hybrid formation, to identify the live cells wherein the hybrid formation of the labeled oligonucleotide probes and the specific mRNA has taken place; and

a fourth step of separating the identified live cells from the live cell group.

Claim 17. (New) The method according to claim 16, wherein the probe comprises a first probe and a second probe, the first probe and the second probe have base sequences complementary to said mRNA and capable of hybridizing thereto adjacently, and the first probe is labeled with an energy donor fluorescent dye and the second probe is labeled with an energy acceptor fluorescent dye, and the change in fluorescence is caused by fluorescence

resonance energy transfer (FRET) from the energy donor fluorescent dye of the first probe to the energy acceptor fluorescent dye of the second probe.

Claim 18. (New) The method according to claim 16, wherein the selective separation in the fourth step of the identified live cells based on the change in fluorescence is performed by a cell sorter.

Claim 19. (New) The method according to claim 16, wherein the specific mRNA is a mRNA encoding a cytokine.

Claim 20. (New) The method according to claim 16, wherein the live cells selectively separated in the fourth step are T Helper 1 (TH1) cells.

Claim 21. (New) The method according to claim 16, wherein the live cells selectively separated in the fourth step are T Helper 2 (TH2) cells.

Claim 22. (New) A method for selectively separating live cells which have expressed a mRNA encoding human interleukin-2 (IL-2) comprising:

a first step of introducing a probe capable of labeling the mRNA into cells in a live cell group containing live cells which have expressed the mRNA;

wherein the probe comprises a base sequence capable of hybridizing to a site of human IL-2 mRNA selected from the group consisting of the 287-316 site and the 342-371 site and is labeled a fluorescent dye, wherein the fluorescence of the fluorescent dye will change upon the formation of a hybrid between the labeled oligonucleotide probe and the mRNA;

a second step of irradiating light to the live cell group containing the live cells having hybridized and unhybridized oligonucleotide probes and the live cells having only unhybridized oligonucleotide probes and measuring the fluorescence which is emitted by the live cells, wherein the fluorescence from the cells having hybridized and unhybridized oligonucleotide probes is different from the fluorescence from the cells having only unhybridized oligonucleotide probes due to a change in fluorescence caused by hybrid

formation, to identify the live cells wherein the hybrid formation of the labeled oligonucleotide probes and the mRNA has taken place; and
a fourth step of selectively separating the identified live cells from the live cell group.

Claim 23. (New) The method according to claim 22, wherein the 287-316 site is shown as 5'-AGAAGAACUCAAACCUCUGGAGGAAGUGCU-3'.

Claim 24. (New) The method according to claim 22, wherein the 342-371 site is shown as 5'-CACUUAAGACCCAGGGACUUAAUCAGCAAU-3'.

Claim 25. (New) The method according to claim 22, wherein the probe comprises a first probe and a second probe, the first probe and the second probe have base sequences complementary to the site and capable of hybridizing thereto adjacently, and the first probe is labeled with an energy donor fluorescent dye and the second probe is labeled with an energy acceptor fluorescent dye, and said change in fluorescence is caused by fluorescence resonance energy transfer (FRET) from the energy donor fluorescent dye of the first probe to the energy acceptor fluorescent dye of the second probe.

Claim 26. (New) A method for selectively separating live cells which have expressed a mRNA encoding human interleukin-4 (IL-4) comprising:

a first step of introducing a probe capable of labeling the mRNA into cells in a live cell group containing live cells which have expressed the mRNA;

wherein the probe comprises a base sequence capable of hybridizing to a site of human IL-4 mRNA selected from the group consisting of the 176-205 site and the 265-294 site and is labeled a fluorescent dye, wherein the fluorescence of the fluorescent dye will change upon the formation of a hybrid between the labeled oligonucleotide probe and the mRNA;

a second step of irradiating light to the live cell group containing the live cells having hybridized and unhybridized oligonucleotide probes and the live cells having only unhybridized oligonucleotide probes and measuring the fluorescence which is emitted by the live cells, wherein the fluorescence from the cells having hybridized and unhybridized

oligonucleotide probes is different from the fluorescence from the cells having only unhybridized oligonucleotide probes due to a change in fluorescence caused by hybrid formation, to identify the live cells wherein the hybrid formation of the labeled oligonucleotide probes and the mRNA has taken place; and
a fourth step of selectively separating the identified live cells from the live cell group.

Claim 27. (New) The method according to claim 26, wherein the 176-205 site is shown as 5'-AGCCUCACAGAGCAGAAGACUCUGU-3'.

Claim 28. (New) The method according to claim 26, wherein the 265-294 site is shown as 5'-ACCUUCUGCAGGGCUGCGACUGUGCUCCGG-3'.

Claim 29. (New) The method according to claim 26, wherein the probe comprises a first probe and a second probe, the first probe and the second probe have base sequences complementary to the site and capable of hybridizing thereto adjacently, and the first probe is labeled with an energy donor fluorescent dye and the second probe is labeled with an energy acceptor fluorescent dye, and said change in fluorescence is caused by fluorescence resonance energy transfer (FRET) from the energy donor fluorescent dye of the first probe to the energy acceptor fluorescent dye of the second probe.